



VCS VERIFICATION / CERTIFICATION REPORT

VOLUNTARY CARBON STANDARD 2007



“HUBEI HEFENG YANZI TOWN BAISHUN VILLAGE TAOHUASHAN HYDROPOWER STATION

VERIFICATION PERIOD:
24 MAY 2007 TO 17 FEBRUARY 2008

REPORT No. 2008-1426

REVISION No. 01

DET NORSKE VERITAS



VCS VERIFICATION / CERTIFICATION REPORT

Date of first issue: 2009-02-16	Project No.: 63608026
Approved by: Michael Lehmann	Organisational unit: Climate Change Services
Client: Beijing Tianqing Power International CDM Consulting, Co., Ltd.	Client ref.: Yuan Xiujaun

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Summary:

Det Norske Veritas Certification AS (DNV) has performed a verification of emission reductions reported from the 'Hubei Hefeng Yanzi Town Baishun Village Taohuashan Hydropower Station' (HHYBTHS), managed by Hefeng Taoyuan Hydropower Co., Ltd. for the period 24 May 2007 to 17 February 2008. The project activity is registered as CDM project activity under the UNFCCC with the Registration Ref. No. being 1438 and with the CDM crediting period of the project starting on 18 February 2008. The emission reductions from 24 May 2007 to 17 February 2008 and thus prior to the CDM crediting period are claimed as Voluntary Carbon Units (VCU) under the Voluntary Carbon Standard (VCS).

In our opinion the GHG emissions reductions reported for the project in the monitoring report dated 12 August 2008 are fairly stated.

The GHG emission reductions were calculated correctly on the basis of the CDM baseline and monitoring methodology AMS-I.D version 10

Det Norske Veritas Certification AS is able to certify that the emission reductions from the 'Hubei Hefeng Yanzi Town Baishun Village Taohuashan Hydropower Station', managed by Hefeng Taoyuan Hydropower Co., Ltd., during the period 24 May 2007 to 17 February 2008 amount to 21 647 tonnes of CO₂ equivalent.

DNV does not assume any responsibility towards the issuance and utilization of VCUs hereby verified and certified.

Request for issuance of VCUs shall be made by the project proponent to an approved VCS Program Registry based on the requirements set out under the most recent version of the VCS Program Guidelines clause on VCS Registration.

The verification of reported emission reductions is based on the information made available to us and the engagement conditions detailed in this report. DNV can not guarantee the accuracy or correctness of this information. Hence, DNV cannot be held liable by any party for decisions made or not made based on this report.

Report No.: 2008-1426	Subject Group: Environment	
Report title: "Hubei Hefeng Yanzi Town Baishun Village Taohuashan Hydropower Station"		
Work carried out by: Tao Li, Lai Chee Keong		
Work verified by: Weidong Yang		
Date of this revision: 2009-02-16	Rev. No.: 01	Number of pages: 13

Indexing terms

Key words Climate Change Kyoto Protocol Validation Clean Development Mechanism	Service Area Verification
	Market Sector
	Process Industry
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Abbreviations

BM	Build Margin
CCPG	Central China Power Grid
CEF	Carbon Emission Factor
CEA	Central Electricity Authority of India
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
DNV	Det Norske Veritas
GHG	Greenhouse gas(es)
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
MP	Monitoring Plan
NGO	Non-governmental Organisation
ODA	Official Development Assistance
OM	Operating Margin
PD	VCS Project Description
PDD	CDM Project Design Document
PPA	Power Purchase Agreement
UNFCCC	United Nations Framework Convention for Climate Change
VCS	Voluntary Carbon Standard
VCU	Voluntary Carbon Units
VER	Verified Emission Reductions



1 INTRODUCTION

Beijing Tianqing Power International CDM Consulting, Co., Ltd. has commissioned Det Norske Veritas Certification AS (DNV) to carry out the verification of emission reductions reported for the “Hubei Hefeng Yanzi Town Baishun Village Taohuashan Hydropower Station” for the period 24 May 2007 to 17 February 2008. The report was carried out as per Voluntary Carbon Standard (VCS) version 2007 /18/. This report contains the findings from the verification and a certification statement for the verified emission reductions.

The project activity is registered as CDM project activity under the UNFCCC with the Registration Ref. No. 1438 and with the CDM crediting period starting on 18 February 2008. The emission reductions from 24 May 2007 to 17 February 2008 and thus prior to the CDM crediting period are claimed as Voluntary Carbon Units (VCU) under the Voluntary Carbon Standard (VCS).

1.1 Objective

Verification of “pre-registration” emission reductions from a project activity is the independent review and *ex-post* determination by a Verification Entity or Designated Operational Entity (DOE) of the monitored reductions in GHG emissions that have occurred as a result of the implementation of an already registered CDM project activity during the period from the date when the project started to operate until the date when the project was actually registered as a CDM project activity by the CDM Executive Board (EB) and thus the start date of the CDM project activity.

Certification is the written assurance by a Certification Entity that, during a specific period in time, a project activity achieved the emission reductions as verified. According to the Verification Protocol and criteria/15/ of the IETA’s Voluntary Carbon Standard, the Certification Entity is defined as an entity which has been accredited as a DOE by the CDM Executive Board for the particular scope into which the project falls or has been accredited as an approved Certification Entity by the VCS Steering Committee. DNV is an accredited DOE for the particular scope into which the project falls.

The objective of this verification was to verify and certify the voluntary emissions reductions reported for the “Hubei Hefeng Yanzi Town Baishun Village Taohuashan Hydropower Station for the period 24 May 2007 to 17 February 2008.

1.2 Scope and Criteria

1.2.1 Scope of the verification

The Verification scope is to:

- Verify whether the reductions generated by the project are in line with the Voluntary Carbon Standard Verification Protocol and the information provided by the project participants contains all the necessary information to evidence the project’s compliance with all criteria in the Voluntary Carbon Standard.
- Verify that the project was implemented as described in the Project Design Document (PDD) during the verification period.
- Confirm that the monitoring system was implemented and fully functional.



- By checking the monitoring records and the emissions reduction calculation, express a conclusion whether reported data are accurate, complete, consistent, and transparent, with a high level of assurance and free of material error or misstatement.
- Validate VCS requirements not covered by the CDM validation

According to the VCS, the verification also includes an independent third party assessment of the project design. In particular, the project baseline, monitoring plan and the project compliance with relevant applicable protocols and criteria (i.e. UNFCCC, VCS, host Party and others) are to be validated in order to confirm that the project design, as documented, is sound and reasonable and meets the applicable criteria.

The project design, its eligibility as CDM project activity and the correct application of the CDM baseline and monitoring methodology AMS.I.D (version 10) were all already validated by the DOE TUV SUD and the project was on 18 February 2008 registered as CDM project activity with the reference number 1438. The validation opinion by TUV SUD is that the “Hubei Hefeng Yanzi Town Baishun Village Taohuashan Hydropower Station” as described in the PDD of /3/(Version 3 of 12 July 2007) meets all relevant UNFCCC requirements for the CDM and all relevant host country criteria and correctly applies the CDM baseline and monitoring methodologies AMS-I.D. As the VCS recognizes the CDM as a GHG Program that meets its VCU Verification Criteria, this verification report thus only addresses VCS specific and unique criteria in terms of project design, applicability to the adopted methodology and additionality that have not been so far addressed in the Validation Report /6/ as per CDM requirements.

1.2.2 Validation Criteria for VCS requirements not covered by the CDM validation

As the project has been validated under the CDM, a further validation shall be completed of clauses 1.12, 1.13, 1.14, 8.1 and 8.2 of the VCS Project Description template (<http://v-c-s.org/docs/VCS%20PD.doc>) as required by the current VCS 2007 “Policy Announcement from the VCS Association - Further Guidance for Projects that are Registered in Two GHG Programs”. This validation was completed as part of this verification.

1.2.3 Verification Criteria

The verification team has focused on the identification of significant reporting risks and verifying the mitigation measures for these based on the recommendations in the Validation and Verification Manual /15/, ISEA3000 (Revised) Assurance Engagements other than Audits or Reviews of Historical Financial Information and/or ISO/FDIS 14064-3 “Greenhouse gases – Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions and employed a risk-based approach.

According to the requirements and guidance of VCS 2007, the criteria of this verification include the relevant applicable rules and steps for CER verification under the CDM excluding:

- the public availability of the VER/VCS Monitoring Report;
- the public availability the Verification Report and VCU Certification Statement.



1.3 VCS Project Description

1.3.1 Project Category

According to the VCS 2007 Guidelines and the list of Sectoral Scopes of the UNFCCC, the project is applicable under the following activity categories:

- category 1 – Renewable energy (wind, PV, solar, thermal, biomass, liquid biofuels, geothermal, run-of-river hydro).

According to Annex A of the Kyoto Protocol, the project is applicable under the sectoral scope 1

- Energy Industries (renewable/ non-renewable sources).

1.3.2 Geographic Location

The project is located at the Jiufengqiao River in Hefeng County, Enshi Tujia-Miao Autonomous Prefecture, Hubei Province, China.

1.3.3 Project Background

The project is a hydro power plant. The installed capacity of the project is 12.6MW consisting of 2 sets of 6.3MW turbines. The details of the turbines with respect to their numbers, type and model of the machines have been verified to be as per details provided in the PD /2/ and registered CDM PDD /3/.

The CDM baseline and monitoring methodologies used is AMS.I.D – “Grid connected renewable electricity generation” (version 10)

The electricity generated is supplied to CCPG (which is dominated by coal-fired power plants) under Power Purchase Agreements (PPAs) /4/.

The project has accounted for emission reductions generated by the proposed project from 24 May 2007 to 17 February 2008. The projects emission reductions are determined by multiplying the net amount of electricity generated by the project by an estimated ex-ante fixed grid emission coefficient of 0.94445 tCO₂e/MWh according to the registered PDD.

Title of the project activity	:	Hubei Hefeng Yanzi Town Baishun Village Taohuashan Hydropower Station
Location of the project activity	:	Jiufengqiao River in Hefeng County, Enshi Tujia-Miao Autonomous Prefecture, Hubei Province, China
Verification period	:	24 May 2007 to 17 February 2008
Project starting date	:	29 August 2005

1.4 Level of assurance

During the verification, DNV has focused on providing a reasonable level of assurance that;

- the emission reduction calculation methodology used is appropriate and correctly applied, and
- the emission reductions have been accurately monitored.



2 METHODOLOGY

The verification of the emission reductions has assessed all factors and issues that constitute the basis for emission reductions from the project according to the applicable CDM methodology AMS-I.D, version 10, including,

- The review of the calculation of the carbon emission factor for the CCPG
- The net electricity supplied by the project activity to CCPG multiplied by the grid emission factor

Verification Team:

Mr. Tao Li	DNV, Certification China	Team leader, GHG auditor
Mr. Lai Chee Keong	DNV, Certification China	CDM verifier
Mr. Weidong Yang	DNV, Certification USA	Technical Reviewer

Duration of verification:

Preparation – (monitoring report review baseline grid factor estimations etc.)	: 14-15 August 2008
Site visit	: 19-20 August 2008
Reporting and QA/QC	: 25 August 2008 -16 February 2009

2.1 Review of Documentation

The monitoring report /1/ and the monthly electricity generation receipts from Enshi Tujia-Miao Autonomous Prefecture Power Supply Co., Ltd on behalf of CCPG were assessed as a part of the verification. In addition the VCS Project Description /2/, in particular the baseline estimations and the monitoring plan contained in the PD and the registered CDM PDD were also assessed.

2.2 Site Visits

In the period of 19-20 August 2008, DNV performed a site visit at Hubei Hefeng Yanzi Town Baishun Village Taohuashan Hydropower Station. During this visit, DNV verified the actual implementation of the project as described in the PD /2/ and the registered CDM PDD /3/. The electricity meters and calibration records of the meters /10/ were checked and found to be in order. The electricity generated is continuously measured, monthly recorded and the net electricity generation was cross checked by the receipt from Enshi Tujia-Miao Autonomous Prefecture Power Supply Co., Ltd /9/ to be correct.

2.3 Assessment

The analysis of documentation, interviews and site visit allowed the assessment of the following processes and assumptions (including QA/QC related issues):

- Monitoring of electricity generated, consumed and exported to the grid is continuously monitored. The amount of electricity exported to the grid was assessed with electricity sales receipts issued by Enshi Tujia-Miao Autonomous Prefecture Power Supply Co., Ltd and cross checked using internal measurement records. The quantity of electric energy exported to the grid is multiplied by the grid emission factor (0.94445 tonCO₂/MWh) defined ex-ante in the registered CDM project activity.

The verification of reported data and information was carried out by means of:



- Checking individual internal measuring records for electricity generation;
- Confirmation of the correct compilation of emission reduction calculation spreadsheets (values included in the spreadsheet were individually checked against the records listed above);
- Verifying the effectiveness of the data quality assurance and control;
- Confirmation that the registered CDM project activity meets the additional VCS 2007 requirements.

2.4 Report of Findings

Findings established during the verification may be that:

- i) the verification is not able to obtain sufficient evidence for the reported emission reductions or part of the reported emission reductions. In this case these emission reductions shall not be verified and certified;
- ii) the verification has identified material misstatements in the reported emission reductions.

While aiming to resolve any outstanding issues which needed be clarified about the project design, findings established during the verification can either be seen as a non-fulfilment of the VCU Verification Criteria or where a risk to the fulfilment of project objectives is identified. Emission reductions with material misstatements shall be discounted based on the verifiers' *ex-post* determination of the achieved emission reductions.

Corrective action requests (CAR) are issued, where:

- i) mistakes have been made with a direct influence on project results requiring adjustments of the VERs/VCUs monitoring report;
- ii) applicable methodological specific requirements have not been met.

A request for clarification (CL) may be used where additional information is needed to fully clarify an issue.

A forward action request (FAR) should be issued, where:

- i) the actual project monitoring and reporting practices requires attention and /or adjustment for the next consecutive verification period, or
- ii) an adjustment of the MP is recommended.

In the context of FARs, risks have been identified, which may endanger the delivery of high quality emissions reductions in the future, i.e. by deviations from standard procedures as defined by the MP. As a consequence, such aspects should receive a special focus during the next consecutive verification. A FAR may originate from lack of data sustaining claimed emission reductions.



3 VERIFICATION FINDINGS

3.1 Remaining issues, including any material discrepancy, from previous validation

The validation report does not identify any remaining issues to be checked during verification.

3.2 Project Implementation

The project has been implemented as planned. DNV has verified the capacity of the turbines to be 12.6MW. The commissioning dates of the turbines were 24 May 2007.

The project activity involves implementation and operation of a 12.6 MW hydro power plant that comprises 2 sets of 6.3MW turbines; the project is grid connected to Central China Power Grid (Central China Power Grid).

The net generated electricity of 22 920.306 MWh as stated in the monitoring report dated from 24 May 2007 to 17 February 2008 was supplied to the grid during the monitored period according to the running records and invoices of the Central China Power Grid (Central China Power Grid) and the project owner.

The generation data considered for the VER project period of 24 May 2007 to 17 February 2008 has been verified by reviewing the 'Power Station Running Recording /11/, and the receipts as certified by the Enshi Tujia-Miao Autonomous Prefecture Power Supply Co., Ltd /9/. The meter test reports of the project have been verified and found to be in order.

The main electricity meter M1 which is bidirectional with 0.2s accuracy is installed at the transfer station, used for both measuring the electricity supplied to and imported from grid. The project proponent also installed backup meter M2 at the plant for cross-checking.

Mr. Hu Nanshan, the general manager of the Hefeng Taoyuan Hydropower Co., Ltd. is responsible for the project monitoring on-site and reporting.

The actual implementation of the project during this verification period was in terms of name plate capacities of each turbine, monitoring equipment and their accuracy levels.

3.2.1 Eligible GHGs

The project activity contributes to reductions in the emissions of carbon dioxide (CO₂) by generating electricity using a renewable source, thus, displacing electricity generation based on fossil fuels in the Central China Power Grid (CCPG).

3.2.2 Project Start Date and Emission Reduction Start Date

The starting date of the project activity and consequently emission reduction start date was 24 May 2007.

3.2.3 Public Funding and Grants

The validation of the CDM project did not reveal any information that indicated that the project received any public funding.



3.2.4 Project Boundary/GHG Assessment Boundary

The project boundary is clearly defined as the site of the project activity as well as the reservoir area and the system boundary for determining the grid emission factor is defined as the CCPG system to which the project plant is connected by transmission lines.

3.2.5 Baseline Determination

The project design was previously assessed by the Designated Operational Entity (DOE) TUV SUD, as part of the CDM validation of the project. The registration of the project by the CDM EB as a eligible CDM project activity thus confirms that:

- i) The project correctly applies the approved baseline and monitoring methodology AMS.I.D (version 10) titled “Renewable electricity generation for a grid”.
- ii) The baseline and monitoring methodologies have been correctly applied and the assumptions made for the selected baseline scenario are sound.

3.2.6 Project Additionality

The project design was previously assessed the DOE TUV SUD as part of the CDM validation of the project. The registration of the project by the CDM EB as a eligible CDM project activity thus confirms that project is not a likely baseline scenario, and that emission reductions resulting from the project are additional.

According to the validation report, the barrier analysis demonstrates that the most plausible scenario is the continuation of current prevailing practice (continuation of use of electricity from isolated systems fuelled by thermal energy) and that the emission reductions by the project are additional to any emission reductions occurring in absence of the project.

3.2.7 GHG Emission

The project design has been previously assessed by the DOE TUV SUD as part of the CDM validation of the project. The registration of the project by the CDM EB as a eligible CDM project activity thus confirms that the approach for determining project and baseline emissions are appropriate and in accordance with the selected baseline and monitoring methodologies.

The calculation of the baseline emission factor was performed as required by ACM0002 as stipulated by AMS-I.D (version 10). The parameters were calculated ex-ante. The Operating Margin (OM) emission factor calculation was based on the simple OM method, option (a) of ACM0002. This method was selected because low cost/ must run resources constitute less than 50% of total grid generation in average of the five most recent years.

The Build Margin (BM) emission factor was also calculated ex-ante based on the most recent information available at the time of PDD submission (data from 2003 to 2005). Details about the data used for calculation of OM and BM emission factors were presented in the PDD and the sources of data were verified by the local assessor during the site visit.

The grid emission factor calculated ex-ante from OM and BM emission factors above mentioned and applied for baseline emission reductions estimative was 0.94445 tonCO₂/MWh.

The reported GHG emission reductions from the project are 21 647 tonnes of CO₂ equivalent during the period from 24 May 2007 to 17 February 2008.



3.2.8 Secondary Effects

Regarding secondary effects (leakage), although no leakage calculation is needed, as explained in the applicable methodologies, no sources of leakage were identified given that the electricity generating equipment is not transferred from any other activity.

3.2.9 Impacts on Sustainable Development

The project design was previously assessed the DOE TUV SUD as part of the CDM validation of the project and the project's social and environmental impacts have been sufficiently addressed by the CDM validation. In addition, the DNA of China has provided confirmation that the project assists in achieving sustainable development, through the Letter of Approval issued on 22 May 2007.

3.3 Completeness of Monitoring

The monitoring indicator, i.e., the net electricity generation, has been monitored with calibrated energy meters as described in the monitoring plan of the PD and monitoring report.

The reporting procedures accurately reflect the content of the monitoring plan. The monitoring mechanism is effective and reliable.

The Central China Power Grid is responsible for installing, maintaining and inspecting the main electricity meter with accuracy of 0.2s which is installed at the power plant for monitoring the electricity delivered to the grid for the monthly billing, the electricity meter will be calibrated annually/10/.

3.4 Accuracy of emission reduction calculations

An electricity meter, which can measure the electricity supplied to the grid and self consumed at the same time, is installed by Enshi Tujia-Miao Autonomous Prefecture Power Supply Co., Ltd. The ownership of the meter has after commissioning been transferred to Enshi Tujia-Miao Autonomous Prefecture Power Supply Co., Ltd for future maintenance. The permissible limit for the meter is 0.2s accuracy class. Monthly meter readings are taken jointly by the parties on the 24th-25th every month at 24:00, and at 17 February 2008, for the purpose of the project implementation, the Grid and Beijing Tianqing Power International CDM Consulting, Co., Ltd. read the meter together and the reading record has been confirm by the grid operator. At the conclusion of each meter reading, an appointed representative of the Enshi Tujia-Miao Autonomous Prefecture Power Supply Co., Ltd on behalf of CCPG and Beijing Tianqing Power International CDM Consulting, Co., Ltd., signed a document indicating the number of kilowatt-hours indicated by the meter /14/. This is then forwarded by Enshi Tujia-Miao Autonomous Prefecture Power Supply Co., Ltd to Beijing Tianqing Power International CDM Consulting, Co., Ltd.

This document clearly indicates the net electricity exported and this again becomes the basis for emission reduction calculations.

The meter is jointly inspected and sealed on behalf of the parties and is not interfered with by either party except in the presence of the other party or its accredited representatives. The general conditions set out for metering, recording, meter readings, meter inspections, test & checking and communication are as per the PPA (power purchase agreement) /4/ with Enshi Tujia-Miao Autonomous Prefecture Power Supply Co., Ltd. Test and joint inspection reports



have been verified.

3.5 Quality of evidence to determine emission reductions

The emission reductions ER_y by the project activity during the reporting period is the difference between baseline emissions (BE_y), project emissions (PE_y) and emissions due to leakage (L_y), as follows:

- 1) Baseline emissions: Baseline emissions (BE_y in tCO_2) are the product of the baseline emissions factor (EF_y in tCO_2/MWh) times the electricity supplied by the project activity to the grid (EG_y in MWh).
- 2) Project emissions: The project emissions are regarded as zero.
- 3) Leakage: No leakage has to be considered for the proposed project activity.
- 4) Emission reductions: $ER_y = BE_y - PE_y - L_y = BE_y$.

For the calculation of the OM emission factor, the simple OM emission factor calculation method is selected because low cost must run projects constitute less than 50% of the total grid generation and data is not available for applying the dispatch data analysis.

The OM is calculated ex-ante as 1.2526 tCO_2/MWh .

The BM is calculated ex-ante as 0.6363 tCO_2/MWh .

The weights ω_{OM} and ω_{BM} are selected as 0.5 and 0.5, respectively, as stipulated for hydro projects by ACM0002 version 6 /16/. The combined margin of CCPG is fixed *ex-ante* in the registered CDM PDD.

The total electricity generated is verified to be 22 977.872 MWh and the captive power by the project is 57.566 MWh. The net amount of electricity delivered to the grid is 22 920.306 MWh and thus the claimed emission reductions of 21 647 tCO_2e reported for the period 24 May 2007 to 17 February 2008 was verified by reviewing the presented electricity generation receipts /9/ of Enshi Tujia-Miao Autonomous Prefecture Power Supply Co., Ltd.

The average load factor for this period is 0.28 (22 977.872 MWh / 12.6 MW / (270 days * 24 H)), is lower than the estimated load factor with 0.40 (44 010 MWh / 12.6 MW / (365 days * 24 H)) in the registered PDD.

The electricity generated and emission reductions claimed for the proposed period were as shown in the following table:

Period	Power Generated MWh	Power Consumed MWh	Net Power Supplied MWh	Emission Reductions (tCO_2)
24/05/2007-25/06/2007	3 217.270	0.703	3 216.567	3 038
25/06/2007-24/07/2007	5 686.512	0	5 686.512	5 371
24/07/2007-24/08/2007	4 418.413	3.471	4 414.942	4 170
24/08/2007-25/09/2007	2 976.073	8.313	2 967.760	2 803
25/09/2007-	1 686.437	7.924	1 678.513	1 585



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24/10/2007				
24/10/2007- 23/11/2007	2 181.350	6.567	2 174.783	2 054
23/11/2007- 24/12/2007	1 421.291	9.724	1 411.567	1 333
24/12/2007- 23/01/2008	691.942	12.845	679.097	641
23/01/2008- 17/02/2008	698.584	8.019	690.565	652
Total	22 977.872	57.566	22 920.306	21 647

Sufficient evidence was presented for the reported net electricity generation.

3.6 Management System and Quality Assurance

Monitoring and reporting of electricity generation is part of normal operations of Hefeng Taoyuan Hydropower Co., Ltd.. The quality of meter readings is assured through calibration of electricity meters /10/ and through cross checking of readings between the meter and the receipts.



4 CERTIFICATION STATEMENT

Det Norske Veritas Certification AS has performed a verification of emission reductions reported for the “Hubei Hefeng Yanzi Town Baishun Village Taohuashan Hydropower Station” managed by Hefeng Taoyuan Hydropower Co., Ltd. for the period 24 May 2007 to 17 February 2008. The project is registered as CDM project activity (UNFCCC Registration Ref. No. 1438) with the CDM crediting period of the project starting on 18 February 2008. The emission reductions from 24 May 2007 to 17 February 2008 and thus prior to the CDM crediting period are claimed as Voluntary Carbon Units (VCU) under the Voluntary Carbon Standard (VCS).

Hefeng Taoyuan Hydropower Co., Ltd. is responsible for the collection of data in accordance with the validated monitoring plan and the reporting of GHG emission reductions from the project.

It is DNV’s responsibility to express an independent verification statement on the reported GHG emission reductions from the project.

In DNV’s opinion the GHG emission reductions reported for the project in the monitoring report of 12 August 2008 are fairly stated and the project design meets all VCU Verification Criteria.

The GHG emission reductions were calculated correctly on the basis of the baseline and monitoring methodology, AMS-I.D version 10 and the monitoring plan provided in the PD. The emission reductions are claimed as Voluntary Carbon Units (VCU) under the Voluntary Carbon Standard (VCS).

Det Norske Veritas Certification AS is able to certify that the emission reductions from the ‘Hubei Hefeng Yanzi Town Baishun Village Taohuashan Hydropower Station’, managed by Hefeng Taoyuan Hydropower Co., Ltd. during the period 24 May 2007 to 17 February 2008 amount to 21 647 tonnes of CO₂ equivalent.

DNV does not assume any responsibility towards the issuance and utilization of the VCUs hereby verified and certified. Request for issuance of VCUs shall be made by the project proponent to an approved VCS Program Registry based on the requirements set out under the most recent version of the VCS Program Guidelines clause on VCS Registration.

The verification of reported emission reductions is based on the information made available to us and the engagement conditions detailed in this report. DNV cannot guarantee the accuracy or correctness of this information. Hence, DNV cannot be held liable by any party for decisions made or not made based on this report.

Beijing, 16 February 2009

Oslo, 16 February 2009

Tao Li

Michael Lehmann

GHG Auditor

Technical Director, Climate Change Services



5 REFERENCES

- /1/ Monitoring Report of Hubei Hefeng Yanzi Town Baishun Village Taohuashan Hydropower Station, Version 1, 12 August 2008.
- /2/ VSC PD of Hubei Hefeng Yanzi Town Baishun Village Taohuashan Hydropower Station, Version 1, 12 August 2008.
- /3/ PDD for Hubei Hefeng Yanzi Town Baishun Village Taohuashan Hydropower Station' Version 3 of 12 July 2007 ,
- /4/ Power Purchase Agreement between Hefeng Taoyuan Hydropower Co., Ltd. and Enshi Tujia-Miao Autonomous Prefecture Power Supply Co., Ltd on behalf of CCPG, 08 July 2007
- /5/ Turbine Test and Joint Inspection Report of 19 May 2007
- /6/ Validation Report by TUV SUD, 19 November 2007.
- /7/ Emission Reduction calculation spreadsheet 12 August 2008
- /8/ Business License of the project owner, available from 05 Jan 2006 to 28 Dec 2035
- /9/ Sales receipts from May 2007 to February 2008
- /10/ Electricity meter installation verification report for main meter dated 12 May 2005 and for backup meter dated 20 October 2006, Calibration report or main meter dated 23 September and both for main meter and backup meter date 17 August 2007.
- /11/ Power station running recording from May 2007 to February 2008
- /12/ The FSR (feasibility study report) of Hubei Hefeng Yanzi Town Baishun Village Taohuashan Hydropower Station dated in August 2004, Hubei Water Resources and Electricity Research Institution and the approval letter dated on 05 October 2005, Hubei Development and Reform Commission.
- /13/ The EIA of the Hubei Hefeng Yanzi Town Baishun Village Taohuashan Hydropower Station in May 2004, Enshi Autonomous Prefecture Environmental Research Institution and the approval letter 24 May 2004, Hubei Environment Protection Bureau
- /14/ Document indicating the number of kilowatt-hours indicated by the meter from Enshi Tujia-Miao Autonomous Prefecture Power Supply Co., Ltd from May 2007 to February 2008
- /15/ International Emission Trading Association (IETA) & the World Bank's Prototype Carbon Fund (PCF), *Validation and Verification Manual*.
<http://www.ieta.org/ieta/www/pages/index.php?IdSitePage=200>
- /16/ Small-scale methodology AMS-I.D Renewable electricity generation for a grid Version 10, dated 23 December 2006. ACM0002 – Approved Consolidated baseline and monitoring methodology Date 19 May 2006
- /17/ CDM Executive Board: *Tool for the demonstration and assessment of additionality*, version 03 of 16 February 2007
- /18/ Voluntary Carbon Standard 2007 (VCS 2007), 19 November 2007.



- /19/ The guidance for deviation in use of methodology AM0005 by several project activities in China by EB. <http://cdm.unfccc.int/Projects/Deviations>
- /20/ The statistics by State Electricity Regulatory Commission (SERC) on newly built thermal plants in 10th "Five-Year Plan" period 2000-2005, and NDRC official website <http://cdm.ccchina.gov.cn/WebSite/CDM/UpFile/2006/20061215144747182.pdf>

Persons interviewed:

- /21/ Mr. Hu Nanshan, General manager, Beijing Tianqing Power International CDM Consulting, Co., Ltd.
- /22/ Mr. Tao Meiguang, Vice General manager, Hefeng Taoyuan Hydropower Co., Ltd.
- /23/ Mr. Wang Guofeng, project manager, Hefeng Taoyuan Hydropower Co., Ltd.
- /24/ Ms. Yuan Xiujuan, project manager, Beijing Tianqing Power International CDM Consulting, Co., Ltd.
- /25/ Ms. Guan Guihong, engineer, Beijing Tianqing Power International CDM Consulting, Co., Ltd.

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Annex 1

Clarification of clauses 1.12, 1.13, 1.14, 8.1 and 8.2 of the VCS PD

The proposed project has been registered as a CDM project on 18 February 2008 and the UNFCCC reference number is 1438. As the VCS came into force on 19 November 2007, this monitoring period shall be verified against the VCS2007 in terms of the VCS 2007 requirements. This clarification is annexed to cover all the requirements set out in the VCS2007 for project validation together with the validated PDD (version 3, dated 12 July 2007), according to the Policy Announcement from the VCS Association.
(<http://www.v-c-s.org/documents.html>)

Clarification of clauses 1.12, 1.13, 1.14, 8.1 and 8.2 of the VCS PD are as follows:

1.12 Demonstration to confirm that the project was not implemented to create GHG emissions primarily for the purpose of its subsequent removal or destruction.

As a hydro power project, the proposed project will produce clean electricity using water resources and will generate GHG emission reductions by avoiding CO₂ emissions from electricity generation of fossil fuel fired power. Operation of this project does not lead to GHG emissions. It is confirmed that the project was not implemented to create GHG emissions primarily for the purpose of its subsequent removal or destruction.

1.13 Demonstration that the project has not created another form of environmental credit (for example renewable energy certificates).

The project is located in China and is developed and operated by Beijing Tianqing Power International CDM Consulting, Co., Ltd., which is a Chinese Investment Enterprise. It was confirmed that there is no other environmental credit (for example renewable energy certificate) which has or will be produced by or obtained for the project.

1.14 Project rejected under other GHG programs (if applicable):

The proposed project is a registered CDM project, and is not rejected projects under other GHG programs.

8.1 Proof of Title:

Evidence of proof of title has been demonstrated via documentation proving ownership of the plant and equipment at the site. The owner has also obtained all relevant permits for to the proposed project including a Business License /8/, FSR (Feasibility Study Report) approval /12/, EIA approval /13/ and PPA /4/. The project's design and implementation has been carried out in compliance with all relevant and national legislation in China.

8.2 Projects that reduce GHG emissions from activities that participate in an emissions trading program (if applicable):

The proposed project has been registered as a CDM project on 18 February 2008 and the reference number is 1438, for which a renewable crediting period of 7 years will be used under the CDM GHG Program and the first crediting period is from 18 February 2008 to 17 February 2015. Therefore, GHG emission reductions generated by the proposed project during the CDM crediting period will be verified as unique CERs during the CDM crediting period. Only GHG emission reductions achieved from 24 May 2007 to 17 February 2008 will be considered as VCUs under the VCS 2007.